

[0036]

What Is Claimed Is:

1. An assembly comprising:

an internal member having annular flange, the flange including an external annular groove, and a slot extending axially and opening circumferentially from said external groove to an open end of the  
5 internal member to define an angled surface;

an external member having a tubular neck portion including an internal annular groove, the neck portion adapted to telescopically surround the flange; and

10 a spring ring engaged in said internal annular groove and said external annular groove for preventing relative axial displacement between said telescoping internal and external members, the spring ring having an arm at one end which extends generally radially inward through said slot and approximately through a center of said spring ring.

2. An assembly according to claim 1 wherein said slot  
15 comprises a first angled surface opposite the arm end of said spring ring.

3. An assembly according to claim 1 wherein said slot comprises first and second angled surfaces, said surfaces opening circumferentially from said external groove to said open end.

4. An assembly according to claim 3 wherein one of said  
20 first and second angled surfaces provides a bearing surface for engaging the arm end of said spring ring.

5. An assembly according to claim 1 wherein said flange and said neck portion have inter-engaging splines.

6. An assembly comprising an outer race of a constant velocity joint and part of a vehicle wheel bearing, wherein the outer race  
5 has a first bore and an internal annular groove in the bore, and wherein the wheel bearing part has a second bore with an open end, an external annular groove, and a slot extending radially from an inner surface of the second bore to an external surface of the bearing part, the slot extending axially and opening circumferentially from said external groove to said open end,  
10 the wheel bearing part and the outer race being held in an assembled position by a spring ring engaged in said internal annular groove and said external annular groove, the spring ring having an arm at one end which extends generally radially inward through said slot and approximately through a center of said spring ring.

15 7. An assembly according to claim 6 wherein said slot comprises a first angled surface opposite the arm end of said spring ring.

8. An assembly according to claim 6 wherein said slot comprises first and second angled surfaces, said surfaces opening circumferentially from said external groove to said open end.

20 9. An assembly according to claim 8 wherein one of said first and second angled surfaces provides a bearing surface for engaging the arm end of said spring ring.

10. An assembly according to claim 6 wherein said first bore of the outer race and said external surface of the bearing part have inter-engaging splines.

11. An assembly according to claim 6 wherein said spring 5 ring, at rest, includes a gap between the arm end and the other end of the spring ring.

12. An assembly according to claim 6 wherein the circumference of said spring ring, at rest, is greater than the circumference of the external surface of the bearing part.

10 13. An assembly according to claim 6 wherein the radial width of the spring ring is less than the depth of the external annular groove.

14. An assembly according to claim 13 wherein the radial width of the spring ring is greater than the depth of the internal annular 15 groove.

15. An assembly according to claim 6 wherein the spring ring defines an open-ended circular body, and the arm is angled with respect to a plane containing the spring ring body.

16. In an assembly comprising an external member having 20 a first bore and an internal annular groove in the first bore, an internal member having an external annular groove, a second bore and a radial slot extending axially and opening circumferentially from said external groove to an open end of the internal member to define an angled surface, and a

spring ring having an arm at one end which extends generally radially inward and approximately through a center of said spring ring, a method of securing together the external member in telescopic relationship with the internal member by the spring ring comprising:

5           mounting the spring ring in the external groove of the internal member so that the arm extends inwardly through said slot into the second bore and the other end of said spring ring is within said external groove;

10           engaging said arm with a tool and rotating said arm towards said other end of said spring ring to releasably hold the spring ring in a contracted state so that it lies substantially within the external groove;

              telescoping the internal member into the external member while the arm is engaged and rotated towards the other end of the spring ring until the internal and external grooves are mutually aligned; and

15           releasing the arm of the spring ring so that the spring ring expands to engage both of the mutually aligned internal and external grooves.

17.          A method according to claim 16 wherein the second bore has an open end and the tool is inserted into the second bore through the open end.

20           18.       A method according to claim 16 wherein said tool is a forked tool and said arm is engaged by receiving said arm in the forked portion of said tool.

25           19.       A method according to claim 16 comprising, after the spring ring has expanded to engage both of said internal and external grooves, inserting a sealing element into the second bore.

20. A method according to claim 16 wherein the step of rotating said arm includes rotating said arm to engage said angled surface of said slot.